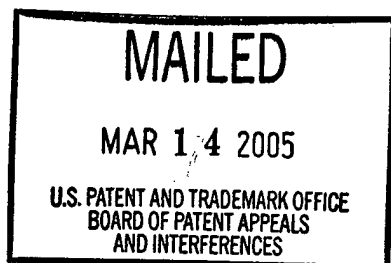


The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GUNTHER KNEBEL,
LAJOS NYARSIK,
HOLGER FRIEDRICH HEINRICH EICKHOFF,
and HANS LEHRACH



Appeal No. 2005-0510
Application No. 09/883,435

ON BRIEF

DECISION ON APPEAL

This is a decision on an appeal from the primary examiner's final rejection of claims 1 through 3, 6 through 10, 12 through 24, 27 through 36, 38, 53 and 54, which are the only claims pending in this application. We have jurisdiction pursuant to 35 U.S.C. § 134.

According to appellants, the invention is directed to a reaction vessel to produce crystals from a substance in liquid form or in solution, where the vessel comprises at least one housing part having several walled reaction chambers, each forming a separate gas chamber, with each reaction chamber having inside

thereof a reservoir and several reaction areas (Brief, page 2). The reaction areas are connected to one another and to the reservoir in order to exchange gas, with the walled reaction chambers disposed immediately adjacent each other in straight rows, and the straight rows are disposed immediately adjacent to one another in immediately adjacent, parallel rows, where each row is demarcated from one another by common walls (*id.*).

Appellants state that claims 1, 7, 27, 35, 36 and 53 "each are patentable on their own merits," with all other claims standing or falling with the claim they depend upon (Brief, page 8). To the extent appellants present reasonably specific, substantive arguments for the patentability of an individual claim (e.g., Brief, page 13), we consider these claims separately. See 37 CFR § 1.192(c)(7)(2003); *In re McDaniel*, 293 F.3d 1379, 1383, 63 USPQ2d 1462, 1465 (Fed. Cir. 2002). A copy of representative independent claim 1 is attached as an Appendix to this decision.

The examiner relies on Kim et al. (Kim), U.S. Patent No. 6,039,804, issued Mar. 21, 2000, as the sole evidence of obviousness. Accordingly, the claims on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kim (Answer, page 3). We *affirm* the rejection of claims 1-3, 6-10, 12-24, 30-35, 53 and 54 under section 103(a) over Kim essentially for the reasons stated

in the Answer and those reasons set forth below. We reverse the rejection of claims 27-29, 36 and 38 under section 103(a) over Kim for reasons which follow. Accordingly, the decision of the examiner is *affirmed-in-part*.

OPINION

The examiner finds that Kim discloses a crystallization tray housing where each tray has a plurality of separate crystallization units, with each unit consisting of a reservoir, a drop chamber with a shoulder for placement of a cover slip, and a cover slip from which a drop solution for crystal growth can be suspended (Answer, page 3). The examiner also finds that Kim teaches optimization of the geometry of the drop chamber (*id.*, citing col. 6, ll. 8-24). From these findings, the examiner concludes that it would have been obvious to one of ordinary skill in this art at the time of appellants' invention to design the reaction vessel with respect to size and shape of the recesses and reaction areas, as well as the number of reaction areas in the vessel (Answer, page 4).

Appellants argue that Kim discloses that each drop chamber 32 is outside the central reservoir 28, and the central reaction chamber, reaction areas and cover slips are generally circular (Brief, pages 9-10). Appellants further argue that, even with

dividers 60 of Figures 6-7 of Kim, the reaction areas 32' do not change position, nor does Kim suggest a common wall between immediately adjacent reaction chambers 28' (Brief, page 10). Appellants also argue that the reaction areas 32 of Kim define a necessary distance between the reaction chambers 28 in each row, which rows are again necessarily spaced from each other by the amount of protrusion of the surrounding reaction areas, rather than being "immediately adjacent" as claimed (Brief, pages 11-12). Appellants argue that none of Kim's variations suggests a common wall demarcating "immediately adjacent" reaction chambers from each other (Brief, page 11). Finally, appellants argue that claims 1 and 36 explicitly state that the reservoir and reaction areas are **inside** the walled reaction chambers while Kim discloses the reaction areas (drop chambers 32) are **outside** the walled reaction chamber (reservoir 28).

It is well settled that, during *ex parte* prosecution, the language of the claims is given the broadest reasonable meaning as in its ordinary usage as it would be understood by one of ordinary skill in the art, taking into account whatever enlightenment that may be afforded by the written description contained in the specification. See *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). The examiner states that appellants

have not defined "immediately adjacent" and thus the reaction chambers of Kim "at least suggest the 'immediately adjacent' reaction chambers" as claimed (Answer, page 5). Appellants argue that "immediately adjacent" has its ordinary dictionary definition, meaning that there is no space between the reaction chambers except for the common walls 5 which demarcate them from each other (Reply Brief, page 2, citing the specification, page 24, ll. 12-14).

Implicit in our review of the examiner's obviousness analysis is that the claim must first have been correctly construed to define the scope and meaning of each contested limitation. See *Gechter v. Davidson*, 116 F.3d 1454, 1457, 1460 n.3, 43 USPQ2d 1030, 1032, 1035 n.3 (Fed. Cir. 1997). We disagree with the examiner since we determine that appellants have defined the term "immediately adjacent" from its use in the specification. We also disagree with appellants' reliance on a dictionary definition since resort to a dictionary is unnecessary as a reasonable meaning of the contested term is set forth in the specification. However, we agree with appellants' construction of this contested term as meaning "with only a common wall between them" (Reply Brief, page 2). See the specification, page 12, ll. 8-10, where the "adjacent reaction chambers are each separated from one another by a common vessel wall"; page 20, ll. 19-20, "respective reaction chambers 6

lying adjacent to one another are separated from one another by at least one common vessel wall 5"; page 21, ll. 5-7, "respectively adjacent reservoirs 7 which are separated from one another by only a vessel wall 5 form a total of 8 reservoirs 7 separated from one another and disposed in immediately adjacent rows parallel with one another"; and page 24, ll. 12-13, "[r]espective immediately adjacent reaction chambers 6 are laterally offset from one another by the row width 24, being demarcated from one another by a common vessel wall 5" (see also Figures 2, 4 and 6). Accordingly, we determine that the specification provides a clear definition in context of "immediately adjacent" to mean "with only a common wall between," with no limitation as to the size or breadth of the wall.

With this claim construction in mind, we compare the claimed subject matter with the disclosure of Kim. Kim discloses a crystallization tray 10 corresponding to the "at least one housing part" of claim 1 on appeal, with several crystallization units 26 which correspond to the claimed "several walled reaction chambers, each forming a separate gas chamber, and each walled reaction chamber having inside thereof a reservoir and several reaction areas co-operating therewith" (see claim 1 on appeal). The crystallization units 26 of Kim comprise several walled reaction

chambers, each with a central reservoir,¹ a separate gas chamber (see Figure 3), and several reaction areas co-operating therewith (see the 4 drop chambers 32 co-operating with the central reservoir 28). The "reaction areas" (drop chambers 32) of Kim are connected to one another and to the reservoir (central reservoir 28) by diffusion channels 30 in order to exchange gas (see col. 5, ll. 4-9). The "walled reaction chambers" of Kim (crystallization units 26) are disposed "immediately adjacent" to each other in straight rows, as the term "immediately adjacent" has been construed above. Similarly, the straight rows of Kim are disposed "immediately adjacent" to one another in "immediately adjacent" parallel rows since each reaction chamber, as well as each row, is disposed with a common wall between one another (e.g., see Figure 2 of Kim, where there is a common wall (unnumbered) around and between each reaction chamber (crystallization unit 26)).

In view of the claim construction and analysis as discussed above, we determine that every limitation recited in claim 1 on

¹Contrary to appellants' argument (Brief, page 12), we determine that the central reservoir 28 of Kim does not correspond to the claimed walled reaction chamber but forms the walled reaction chamber with the drop chambers 32 and the diffusion channels 30. Therefore the reaction areas (drop chambers 32) of Kim are *inside* the walled reaction chamber (the crystallization unit 26).

appeal is described by the disclosure of Kim. A description of every claimed limitation by one reference constitutes anticipation of the claimed subject matter. See *In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986). Since anticipation or lack of novelty is the epitome or ultimate of obviousness, we affirm the examiner's rejection of claim 1 on appeal under section 103(a) for obviousness over Kim. See *In re Fracalossi*, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982). Since claims 2-3, 6, 8-10, 12-24, 30-34 and 54 have not been separately argued by appellants, these claims fall with claim 1 for reasons discussed above. See 37 CFR § 1.192(c)(7)(2003); *In re McDaniel*, *supra*.

With regard to claims 7 and 53, appellants argue that Kim does not suggest the parallelogram or rectangle configurations required by these claims (Brief, pages 12-13). Appellants further argue the honeycomb arrangement of prisms as recited in claim 35 is not suggested by the circular arrangement taught by Kim (Brief, page 13). These arguments are not persuasive since, as noted by the examiner (Answer, pages 3-5), Kim suggests changing the geometry of the units (Kim, col. 6, ll. 8-24). Accordingly, we agree with the examiner that it would have been *prima facie* obvious to one of ordinary skill in this art at the time of appellants' invention to use well known geometric forms for the reaction chamber.

For the foregoing reasons and those stated in the Answer, we determine that the examiner has established a *prima facie* case of obviousness in view of the reference evidence. Based on the totality of the record, including due consideration of appellants' arguments, we determine that the preponderance of the evidence weighs in favor of obviousness within the meaning of section 103(a). Accordingly, we affirm the examiner's rejection of claims 1-3, 6-10, 12-24, 30-35, 53 and 54 under 35 U.S.C. § 103(a) over Kim.

Appellants argue that nothing in Kim suggests another reaction area formed by a recess above the reservoir as recited in claims 36 and further limited in claim 27 (Brief, page 13; Reply Brief, page 2). The examiner concludes that it would have been obvious to one of ordinary skill in the art "to include a top part or lid with a reaction area (see col. 2 lines 63 and col. 3 lines 1-5) since Kim discloses such." Answer, page 4. The examiner finds that Kim discloses "a lid (i.e., a cover slip) with a reaction area (see col. 2 lines 63 and col. 3 lines 1-5)." Answer, page 5.

We agree with the examiner's findings but note that all of the claimed limitations have not been disclosed or suggested by these findings from Kim. The examiner has found that Kim discloses a lid or cover slip (i.e., cover slip 50; see Figures 4-5) that includes

an area where a drop of solvent containing at least one dissolved substance to be crystallized is placed, thus forming a "reaction area" (col. 2, ll. 64-66). However, claims 36 and 27 include the limitation that the at least one reaction area in the vessel top part is "formed by a recess above the reservoir" (e.g., see claim 36). The examiner has not addressed this limitation, which has been specifically argued by appellants (Brief, page 13; Reply Brief, page 2). Therefore the examiner has not advanced any reasoning, on this record, why a recess in the cover slip to form a reaction area would have been obvious to one of ordinary skill in this art at the time of appellants' invention. To the contrary, the evidence of record suggests the opposite conclusion, since Kim discloses that the drop of dissolved substance to be crystallized is placed on the cover slip which is then "located over the central reservoir so that the drop of solvent is suspended from the coverslip and *hangs down into the central reservoir*" (sentence bridging cols. 2-3, emphasis added). Since Kim desires the drop to be suspended so that it hangs down into the reservoir, there would appear to be no suggestion, teaching or incentive to form a reaction area that is recessed from the reservoir into the lid or cover slip.

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For the foregoing reasons, we determine that the examiner has not established a *prima facie* case of obviousness in view of the reference evidence for claims 27 and 36, and claims 28, 29 and 38 which depend therefrom. Accordingly, the examiner's rejection of claims 27-29, 36 and 38 under 35 U.S.C. § 103(a) over Kim is reversed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv) (effective Sep. 13, 2004; 69 Fed. Reg. 49960 (Aug. 12, 2004); 1286 Off. Gaz. Pat. Office 21 (Sep. 7, 2004)).

AFFIRMED-IN-PART

THOMAS A. WALTZ
Administrative Patent Judge


ROMULO H. DELMUNDO
Administrative Patent Judge

BOARD OF PATENT
APPEALS
AND
INTERFERENCES


BEVERLY A. PAWLIKOWSKI
Administrative Patent Judge

TAW/jrg

APPENDIX

1. Reaction vessel for producing a crystal from a substance in liquid form or in solution, comprising at least one housing part having several walled reaction chambers, each forming a separate gas chamber, and each walled reaction chamber having inside thereof a reservoir and several reaction areas co-operating therewith, the reaction areas being connected to one another and to the reservoir in order to exchange gas, the walled reaction chambers being disposed immediately adjacent each other in straight rows, the straight rows being disposed immediately adjacent to one another in immediately adjacent, parallel rows and distributed in an identical manner, and the immediately adjacent walled reaction chambers in the immediately adjacent, parallel rows and in each row being demarcated from one another by common walls, whereby the number of reaction chambers in the reaction vessel is maximized.

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